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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/625,873	07/26/2000	Robert Wallace	CX099034	8383

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EXAMINER

SHELEHEDA, JAMES R

ART UNIT	PAPER NUMBER
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2614

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DATE MAILED: 04/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/625,873

Applicant(s)

WALLACE, ROBERT

Examiner

James Sheleheda

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

1. Claims 1 and 8 are objected to because of the following informalities:

In claim 1, line 4, the phrase "first headend elements" should be changed to --first headend element--.

In claim 8, lines 7, 8 and 10, the phrase "detected headend elements" should be changed to --detected headend element--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 3 and 4 are rejected under 35 U.S.C. 102(e) as being anticipated by Ohishi et al. (Ohishi) (6,480,551).

As to claim 1, Ohishi discloses a fault tolerant headend system (Fig. 1; transmitting device, 12; column 1, lines 8-21) comprising:

at least two headend elements (Fig. 13; signal processors, 72-1 to 73), a first headend element (signal processor, 72-N) and an adjacent headend element (signal processor, 73);

at least one switching device (one of switches 74-1 or 74-2...74-N) having an output port (leading to adder, 75) capable of connecting to one of at least two input ports (Fig. 13; port a and port b) wherein one input port is connected to said first headend elements (Fig. 13; port a connecting to signal processor 72-N) and another input port is connected to said adjacent headend element (Fig. 13; port b connecting to signal processor, 73);

wherein said output port of each switching device is connectable to an output cable (cable connection from each switch 74-1, 74-2...74-N to adder 75 illustrated in Fig. 13);

wherein said adjacent headend element (signal processor, 73) is capable of taking over functioning of said first headend element (column 12, lines 66-67 and column 13, lines 1-10); and

at least one of said headend elements is a spare headend element (column 12, lines 36-37).

As to claim 3, Ohishi discloses wherein the headend system is a cable headend system (column 5, lines 1-8).

As to claim 4, Ohishi discloses wherein each of said switching devices (Fig. 13; each switch 74-1, 74-2...74-N) is a 2 to 1 switching device having two input ports, ports a and b, and one output port, each having an output to adder 15.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohishi.

As to claim 5, while Ohishi discloses wherein each of said switching the devices is a 2 to 1 switching device having two input ports (Fig. 13, ports a and b) and one output port (Fig. 13; output to adder) and wherein a plurality of spare processors can be connected to the switches to cover for failed processors (column 15, lines 50-56), he fails to specifically disclose wherein the switching device is a 3 to 1 switching device with 3 input ports.

It would have been obvious to one of ordinary skill in the art to modify Ohishi's system to include wherein the switching device is a 3 to 1 switching device with 3 input ports because the modification involves a mere substitution of the disclosed switch with a 3 to 1 switch to implement the use of more than one (for example two) spare processors as described by Ohishi. The use of switches with more inputs is an obvious

variation on Ohishi's system to increase the number of redundant signal processors to protect the system from faults as desired by Ohishi.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohishi as applied to claim 1 above, and further in view of Lindberg et al. (Lindberg) (6,442,160).

As to claim 2, while Ohishi discloses a plurality of switching devices (Fig. 13; 74-1 to 74-N), he fails to specifically disclose wherein the switches are configurable in modular fashion wherein individual switching devices are installable and removable to scalably configure capacity.

In an analogous art, Lindberg discloses a communications system (Fig. 1) which utilizes a modular switch to enable the installing of individual switches to scalably configure capacity (column 9, lines 45-56) for the advantage of increasing a system's flexibility by increasing switching capacity as needed (column 9, lines 48-55).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify Ohishi's system to include wherein the switches are configurable in modular fashion wherein individual switching devices are installable and removable to scalably configure capacity, as taught by Lindberg, for the advantage of ensuring that a system's switching capacity keeps up with demand by easily adding additional switch modules and expanding the fault tolerant system as desired by Ohishi.

7. Claim 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohishi as applied to claim 1 above, and further in view of Mann (5,862,312).

As to claim 6, while Ohishi discloses wherein a user monitors the state of said first headend element (column 13, lines 20-26), he fails to specifically disclose wherein said first headend element includes state information; said state information accessible by said adjacent headend element.

In an analogous art, Mann discloses a video delivery system (column 14, lines 12-14) employing a plurality of video systems (Fig. 13; 134, 136 and 150) wherein each video system has status information (column 15, lines 49-53) which is accessible by every other video system (column 15, lines 49-53) for the benefit of monitoring and automatically replacing failed processors (column 15, lines 49-54).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify Ohishi's system to include wherein said first headend element includes state information; said state information accessible by said adjacent headend element, as taught by Mann, to ensure uninterrupted output by monitoring and automatically compensating for failed processors in a fault tolerant video distribution system.

As to claim 7, while Ohishi discloses a plurality of headend elements arranged in a row (Fig. 13, signal processors 72-1 to 73),

wherein if one headend element fails, said switching devices shift at least one headend element so that an adjacent headend element (spare processor, 73) to said failed element (processor, 72-N) takes over for said failed element (column 12, lines 66-67 and column 13, lines 1-10); and

wherein said adjacent element is said spare headend element (column 12, lines 66-67 and column 13, lines 1-10), he fails to specifically disclose wherein said switching devices shift so that an adjacent headend element takes over for said failed headend element and said spare headend element takes over for a headend element adjacent to said spare headend element.

In an analogous art, Mann discloses a video delivery system (column 14, lines 12-14) employing a plurality of video systems (Fig. 13; 134, 136 and 150) wherein when a fault is detected (column 15, lines 49-54 and lines 6-10) an adjacent video system is takes over for a failed video system (column 15, lines 10-16) and a spare video system (video system, 150; column 14, lines 27-32) will take over for the adjacent video system (column 15, lines 10-20) by shifting their switches and a neighboring switch (column 15, lines 45-49) for the benefit of monitoring and automatically replacing failed processors (column 15, lines 49-54).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify Ohishi's system to include wherein said switching devices shift so that an adjacent headend element takes over for said failed headend element and said spare headend element takes over for a headend element adjacent to said spare headend element, as taught by Mann, to ensure uninterrupted output by monitoring and automatically compensating for failed processors in a fault tolerant video distribution system.

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohishi, in view of Mann et al. (Mann) (5,862,312).

As to claim 8, Ohishi discloses a method of providing a fault tolerant headend system (Fig. 1; transmitting device, 12; column 1, lines 8-21) comprising:

connecting a plurality of adjacent headend elements (Fig. 13; signal processors, 72-1 to 73), to a series of switching devices (Fig. 13; 74-1 to 74-N) wherein at least one of said headend elements is a spare headend element (signal processor, 73; column 12, lines 36-37);

detecting a fault in one of said headend elements (column 13, lines 20-26);

shifting headend elements, comprising:

configuring a headend element (signal processor, 73) adjacent to said fault detected headend element (any of processors, 72-1 to 72-N) to take over functioning of said fault detected headend element (column 12, lines 66-67 and column 13, lines 1-10); and

changing a state of a specific switching device (one of switches 74-1 to 74-N) to connect said adjacent headend element to an output cable of said fault detected headend element (column 12, lines 66-67 and column 13, lines 1-10).

While Ohishi discloses wherein the adjacent headend element is the spare headend element, wherein the spare headend element is capable of taking over functioning of at least one adjacent headend element and shifting the spare headend element until it is connected to the output cable,

Ohishi fails to specifically disclose wherein each headend element is capable of taking over functioning of at least one adjacent headend element and performing said steps of shifting headend elements in the direction of the spare headend element, until the spare is connected to an output cable.

In an analogous art, Mann discloses a video delivery system (column 14, lines 12-14) employing a plurality of video systems (Fig. 13; 134, 136 and 150) wherein each video system is capable of taking over function of an adjacent video system (column 15, lines 10-20) and wherein when a fault is detected (column 15, lines 49-54 and lines 6-10) the video systems are shifted in the direction of the spare video system (column 15, lines 1-16) until the spare is outputting a video feed (column 15, lines 1-16) for the benefit of monitoring and automatically replacing failed processors (column 15, lines 49-54).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify Ohishi's system to include wherein each headend element is capable of taking over functioning of at least one adjacent headend element and performing said steps of shifting headend elements in the direction of the spare headend element, until the spare is connected to an output cable, as taught by Mann, to ensure uninterrupted output by monitoring and automatically compensating for failed processors in a fault tolerant video distribution system.

9. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohishi and Mann as applied to claim 8 above, and further in view of Conforti (4,672,603).

As to claim 9, while Ohishi and Mann disclose refreshing said failed element (see Ohishi at column 13, lines 11-19), they fail to specifically disclose refreshing said failed element to serve as a new spare element.

In an analogous art, Conforti discloses a data transmission system (Fig. 1; column 1, lines 7-10) containing an active processor and a backup processor (column 2, lines 7-14) wherein if a fault is found in the active processor the backup processor becomes active and the previously active processor is then configured to serve as the standby processor (refreshing; column 2, lines 11-17). This configuration limits interruptions to the communications system by only switching processors upon the detection of a fault the currently active processor.

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify Ohishi and Mann's system to include refreshing said failed element to serve as a new spare element, as taught by Conforti, to ensure the limiting of interruptions to the communications system by switching out processors only upon the detection of a fault in the currently active processors in a cable television fault tolerant system.

Conclusion

10. The following are suggested formats for either a Certificate of Mailing or Certificate of Transmission under 37 CFR 1.8(a). The certification may be included with all correspondence concerning this application or proceeding to establish a date of mailing or transmission under 37 CFR 1.8(a). Proper use of this procedure will result in such communication being considered as timely if the established date is within the required period for reply. The Certificate should be signed by the individual actually depositing or transmitting the correspondence or by an individual who, upon information

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Certificate of Mailing

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Signature: _____

Please refer to 37 CFR 1.6(d) and 1.8(a)(2) for filing limitations concerning facsimile transmissions and mailing, respectively.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Sheleheda whose telephone number is (703) 305-8722. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the primary examiner, Chris Grant can be reached on (703) 305-4755. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James Sheleheda
Patent Examiner
Art Unit 2614

JS


CHRIS GRANT
PRIMARY EXAMINER